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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/034,620	12/27/2001	James W. Overbeck	3319.3 (02US2)	9519

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EXAMINER

NGUYEN, THONG Q

ART UNIT PAPER NUMBER

2872

DATE MAILED: 03/31/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/034,620

Applicant(s)

OVERBECK, JAMES W.

Examiner

Thong Q. Nguyen

Art Unit

2872

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 21 January 2005.
2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 62-81 and 91-97 is/are pending in the application.
4a) Of the above claim(s) 66 and 67 is/are withdrawn from consideration.
5) ☐ Claim(s) _____ is/are allowed.
6) ☒ Claim(s) 62-65, 68-81 and 91-97 is/are rejected.
7) ☐ Claim(s) _____ is/are objected to.
8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 1/21/2005 has been entered.

Response to Amendment

2. The present Office action is made in response to the amendment filed on 1/21/2005.

It is noted that in the mentioned amendment, applicant has made changes to the claims as follow: First, applicant has made amendments to claims 62, 65, 69 and 71-72; Second, applicant has canceled claims 82-90; and Third, applicant has added a new set of claims, i.e., claims 91-97, into the application. Note: the applicant in the Pre-amendment of 6/11/2002 canceled Claims 1-61. As amended and newly-added, the pending claims 62-81 and 91-97 are subjected to the following restriction requirement.

Election/Restrictions

3. Restriction to one of the following inventions is required under 35 U.S.C. 121:

- I. Claims 63-64, 72-81, and 91-97, drawn to a scanner having an oscillating support structure for supporting a scanning assembly and an objective lens, classified in class 359, subclass 196+.

- II. Claims 66-67, drawn to a scanner having a data collection control and processing unit for collecting data in a specific manner of the scanning operation, classified in class 359, subclass 363+.
4. Claim 62 links inventions I and II. The restriction requirement among the linked inventions is subject to the nonallowance of the linking claim 62. Upon the allowance of the linking claim(s), the restriction requirement as to the linked inventions shall be withdrawn and any claim(s) depending from or otherwise including all the limitations of the allowable linking claim(s) will be entitled to examination in the instant application. Applicant(s) are advised that if any such claim(s) depending from or including all the limitations of the allowable linking claim(s) is/are presented in a continuation or divisional application, the claims of the continuation or divisional application may be subject to provisional statutory and/or nonstatutory double patenting rejections over the claims of the instant application. Where a restriction requirement is withdrawn, the provisions of 35 U.S.C. 121 are no longer applicable. *In re Ziegler*, 44 F.2d 1211, 1215, 170 USPQ 129, 131-32 (CCPA 1971). See also MPEP § 804.01.

Note: Claims 65 and 68-71 are not directed to the mentioned groups thus these claims will be examined with the linking claim 62 and the claims of the elected group of invention.

5. The inventions are distinct, each from the other because of the following reasons:
- Inventions I and II are related as subcombinations disclosed as usable together in a single combination. The subcombinations are distinct from each other if they are shown to be separately usable. In the instant case, the subcombination I has separate

utility without the details related to the data collection control and processing unit of the subcombination II and vice versa. See MPEP § 806.05(d).

6. Because these inventions are distinct for the reasons given above and have acquired a separate status in the art as shown by their different classification, restriction for examination purposes as indicated is proper.

7. Since the present application is refiled under the rule 37 CFR 1.114 and the invention I has examined on the merits, thus claims 62-65, 68-81 and 91-97 are examined in this Office action, and claims 66-67 have been withdrawn from further consideration as being directed to non-elected inventions.

Oath/Declaration

8. The objection to the Oath/Declaration as made in the previous Office action of 9/17/2004 is now withdrawn due to the filing of a new Oath by the applicant on 1/21/2005.

Specification

9 The following corrections are suggested to the specification.

a) In page 1, line 8, --now U.S. Patent No. 6,201,639-- should be added after "Microscopy," and on line 9, --now U.S. Patent No. 6,185,030-- should be added after "title,"; b) In page 23, on line 15, "Nn" should be changed to --In--, and on line 20, "\$c" should be changed to --4B--; c) In page 31, on line 19, --now U.S. Patent No. 6,262,838-- should be added after ""1998," and on line 28, "60" should be deleted. The reason is that the drawings do not shown any element labeled as "60"; d) In page 32, on line 15, "43" should be changed to --93--since the numerical reference "43" is used for a

motion sensor as can be seen in figure 3 and the linear actuator is labeled as "93" as can be seen in page 32, line 1; e) In page 40, on line 13, "18b) should be deleted because the drawings do not show any component labeled as "18b". Appropriate correction is required.

It is noted that the correction to the specification was made in the previous Office action of 9/17/2004, pages 5-6. While the applicant has agreed to the mentioned correction suggested by the Examiner (see amendment of 1/21/2005, page 7, the first paragraph); however, applicant has not made any changes to the specification.

Claim Objections

10. The objections to claims 69, 71 and 72 as set forth in the previous Office action of 9/17/2004 are now withdrawn due to the changes to the claims as provided in the amendment of 1/21/2005.

Claim Rejections - 35 USC § 112

11. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

12. Claims 62-65, 68-71 and 94-97 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

- a) Claim 62 is rejected under 35 USC 112, first paragraph because the specification does not provide support for the feature thereof "a focusing mechanism constructed to focus said objective lens with respect to the surface being scanned" which is newly-added to the claim 62, lines 9-10. Applicant is respectfully invited to review the specification in pages 28-29 in which the specification discloses the use of a mechanism (8) for moving and/or tilting the base plate (7) supporting the slide (2) for focusing. The specification has not disclosed that a focus mechanism is used to move or operate on the objective lens for the purpose of focusing as read in the mentioned feature.
- b) The remaining claims are dependent upon the rejected base claim and thus inherit the deficiencies thereof.

Claim Rejections - 35 USC § 102

13. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

14. Claims 62-63, 68-69, 95 and 97, as best as understood, are rejected under 35 U.S.C. 102(b) as being anticipated by Kimura (U.S. Patent No. 5,241,364, of record).

Kimura discloses a confocal microscope for examining object which is able to include sample of living organism or sample having fluorescent agent (see columns 1 and 2). The microscope as described in columns 21+ and shown in figures 9-11 comprises a stand supporting a scanning assembly and a driving mechanism for driving the scanning assembly. The scanning assembly (115) comprises a scan arm supporting an objective lens (117) wherein the light path

from the end of the fiber (114) to the surface of the object (123) is kept constant when the scanning assembly (115) is oscillated by the driving mechanism (133) along a main scanning direction which direction is parallel to the plane of the object surface. It is noted that the light path from the object (123) to the detecting system (139 or 141) is also maintained constant during the scanning process.

The microscope also comprises another support (151) supporting the object and a driving mechanism for moving the object in a sub-scanning direction.

Regarding to the feature related to a focusing mechanism as recited in the newly-added material to the claim 62, such a feature is understood that the device claimed comprises a mechanism for moving/tilting the stage support a specimen.

The support for that conclusion is found in the present specification in pages 28-29. In that aspect then it is noted that in column 20, lines 52 through column 21, lines 5 of the patent No. 5,241,364, Kimura discloses that the support (151) and the piezoelectric (149, 147) are operated to bring the specimen (123) into focus so that the information in the focal plane is detected by the detecting elements (139, 141). The light from the object is guided to a detecting system (136-141) which collects data during the scanning motion and processes the collected data.

Regarding to the feature that the numerical aperture of the objective lens is larger than 0.5 as recited in claim 68, such a feature is inherently from the system provided by Kimura because an objective used in a high speed scanning must have a large numerical aperture as admitted by the applicant in the present specification in page 4.

Claim Rejections - 35 USC § 103

15. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

16. Claims 62 and 65, as best as understood, are rejected under 35 U.S.C. 103(a) as being unpatentable over Kain et al (U.S. Patent No. 5,578,818, of record) in view of Nomura et al (U.S. Patent No. 4,948,330, of record).

Kain et al discloses a scanning system for scanning a sample and for guiding fluorescent light from the sample to a detecting system. The scanning system as described in column 5 and shown in figure 7 comprises a scanning assembly (20) supporting optics having filters (18, 22), beamsplitters (24) and objective (32) wherein the light path defined between the output end of the fiber (44) to the surface of the object to be scanned in a plane perpendicular to the light path is has a constant length. The only feature missing from the scanning system provided by Kain et al is that they do not disclose that a focus mechanism including a tilting mechanism for moving the specimen for the purpose of focusing. However, the use of a stage supporting a sample wherein the stage is driven by a mechanism which is able to drive the stage in a plane perpendicular to the direction of a light path and also able to tile the stage for focusing is known to one skilled in the art as can be seen in the stage for use with a microscope provided by Nomura et al. See columns 3-4 and figs 1 and 3. Thus, it would have been obvious to one skilled in the art at the time the invention was made to modify the scanning system provided by Kain et al by using a mechanism as

suggested by Nomura et al for driving the stage in a plane perpendicular to the light path fro the purpose of presenting different areas of a large object to the scanning system and for tilting the stage for the purpose of focusing.

17. Claims 68-71 and 97 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kain et al in view of Nomura et al as applied to claim 62 above, and further in view of Mathies et al (U.S. Patent No. 5,091,652, of record).

The combined product provided by Kain et al and Nomura et al as described above does not clearly state that the fluorescent object is a DNA chip comprised biological material or arranged for hybridization of a biological material. However, the use of a scanning system for observing a DNA sample contained biological material is known to one skilled in the art as can be seen in the scanning system provided by Mathies et al. See columns 4-6. It is also noted that the use of an objective lens having a numerical aperture larger than 0.5 is suggested by Mathies et al as can be seen in column 3, lines 53-57. Thus, it would have been obvious to one skilled in the art at the time the invention was made to utilize/ modify the combined product provided by Kain et al and Nomura et al as suggested by Mathies et al by using the product for observing a DNA sample contained a biological material and an objective lens having a numerical aperture of 1.3 for providing a wide field of view.

Double Patenting

18. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11

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F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

19. Claims 62-65, 68-81 and 91-97, as best as understood, are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-35 of U.S. Patent No. 6,201,639 in view of Kimura (U.S. Patent No. 5,241,364, of record).

The device as claimed in claims 1-35 of the Patent '639 discloses a wide field of view scanner having a scanning mechanism supporting an objective lens and a mechanism for driving the scanning assembly. The features related to a driver, the detector in the form of a position element, light source, light detector, translation system for producing movement of the object and data processing system are disclosed as can be seen in claims 1-2, 6-7, 9-11, 15, 19, 21 and 23. The only feature missing from the device of the mentioned Patent claims is that they do not clearly state that the light path from the light source to the object has a constant length. However, the use of a scanning system having a scanning assembly supporting objective lens and the output end of a fiber of an illuminating system in a microscope wherein the path length from the output end of the fiber to the object has a constant length during a scanning process is

known to one skilled in the art as can be seen in the microscope provided by Kimura. In particular, Kimura discloses a confocal microscope for examining object which is able to include sample of living organism or sample having fluorescent agent (see columns 1 and 2). The microscope as described in columns 21+ and shown in figures 9-11 comprises a stand supporting a scanning assembly and a driving mechanism for driving the scanning assembly. The scanning assembly (115) comprises a scan arm supporting an objective lens (117) wherein the light path from the end of the fiber (114) to the surface of the object (123) is kept constant when the scanning assembly (115) is oscillated by the driving mechanism (133) along a main scanning direction which direction is parallel to the plane of the object surface. . It is noted that the light path from the object (123) to the detecting system (139 or 141) is also maintained constant during the scanning process. The microscope also comprises another support (151) supporting the object and a driving mechanism for moving the object in a sub-scanning direction. Regarding to the feature related to a focusing mechanism as recited in the newly-added material to the claim 62, such a feature is understood that the device claimed comprises a mechanism for moving/tilting the stage support a specimen. The support for that conclusion is found in the present specification in pages 28-29. In that aspect then it is noted that in column 20, lines 52 through column 21, lines 5 of the patent No. 5,241,364, Kimura discloses that the support (151) and the piezoelectric (149, 147) are operated to bring the specimen (123) into focus so that the information in the focal plane is

detected by the detecting elements (139, 141). The microscope also comprises another support (151) supporting the object and a driving mechanism for moving the object in a sub-scanning direction. The light from the object is guided to a detecting system (136-141) which collects data during the scanning motion and processes the collected data. Thus, it would have been obvious to one skilled in the art at the time the invention was made to modify the scanning system recited in the claims 1-35 of the patent '639 by using a scanning assembly supporting the objective lens and the point source as suggested by Kimura for the purpose of maintaining the length of the light path constant.

Response to Arguments

20. Applicant's arguments filed on 1/21/2005, pages 7-9, have been fully considered but they are not persuasive.

A) Regarding to the rejections of claims 62-63 and 68-69, now applied to claims 62-63, 68-69, 95 and 97, over the art of Kimura. applicant's arguments as provided in the amendment, pages 7-8 have been fully considered but they are not persuasive for the following reasons.

First, applicant's arguments do not comply with 37 CFR 1.111(c) because they do not clearly point out the patentable novelty which he or she thinks the claims present in view of the state of the art disclosed by the references cited or the objections made. Further, they do not show how the amendments avoid such references or objections.

Second, in response to applicant's arguments against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986).

Third, applicant has argued that Kimura does not disclose a scanner having the feature that the light path from the light source to the scanned surface and from the scanned surface to the detecting system is kept constant during a scanning process. The Examiner respectfully disagrees with the applicant's viewpoint and respectfully invited the applicant to review the art of Kimura. In particular, the microscope as described in columns 21+ and shown in figures 9-11 comprises a stand supporting a scanning assembly and a driving mechanism for driving the scanning assembly. The scanning assembly (115) comprises a scan arm supporting an objective lens (117) wherein the light path from the end of the fiber (114) to the surface of the object (123) is kept constant when the scanning assembly (115) is oscillated by the driving mechanism (133) along a main scanning direction which direction is parallel to the plane of the object surface. It is noted that the light path from the object (123) to the detecting system (139 or 141) is also maintained constant during the scanning process. The microscope also comprises another support (151) supporting the object and a driving mechanism for moving the object in a sub-scanning direction. Regarding to the feature related to a focusing mechanism as recited in the newly-added material

to the claim 62, such a feature is understood that the device claimed comprises a mechanism for moving/tilting the stage support a specimen. The support for that conclusion is found in the present specification in pages 28-29. In that aspect then it is noted that in column 20, lines 52 through column 21, lines 5 of the patent No. 5,241,364, Kimura discloses that the support (151) and the piezoelectric (149, 147) are operated to bring the specimen (123) into focus so that the information in the focal plane is detected by the detecting elements (139, 141).

B) Regarding to the rejection of claims 62 and 65 under the combination art of Kain et al and Nomura et al, applicant's arguments as provided in the amendment of 1/26/2005, pages 8-9, have been fully considered but they are not persuasive.

First, applicant's arguments do not comply with 37 CFR 1.111(c) because they do not clearly point out the patentable novelty which he or she thinks the claims present in view of the state of the art disclosed by the references cited or the objections made. Further, they do not show how the amendments avoid such references or objections.

Second, in response to applicant's arguments against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986).

Third, In response to applicant's argument that there is no suggestion to combine the references, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, it is a common knowledge to one skilled in the art to focus the light in the scan bead provided by Kain et al on the object during the scanned surface so that the detecting system will collect the data in the focus plane to warrant the quality of the image. If the object to be scanned is not in the focus plane of the scanning head then it would have been obvious to one skilled in the art to either move the scanning head or the stage support the specimen/object so that the surface of the object in the focus plane of the scanning head. In that aspect then the mechanism for moving the object as provided by Nomura et al is an example of moving the object for bring the object into the focus plane of an observation system. One skilled in the art would have been obvious to utilize the focus mechanism provided by Nomura et al for moving the object in the system of Kain et al for the purpose of bringing the object into focusing of the scanning head so that quality of image detected by the detecting system is obtained.

C) Regarding to the rejection of claims 68-71, now applied to claims 68-71 and 97, the rejection as set forth in the previous Office action and is repeated in this Office action is maintained. Since applicant has not provided any arguments to the rejection, therefore, the claims are still rejected for the same reasons as set forth in the rejections.

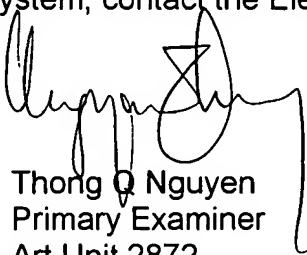
D) Regarding to the rejection of the claims 62-65 and 68-81, now applied to claims 62-65, 68-81 and 91-97 under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-35 of U.S. Patent No. 6,201,639 in view of Kimura. The rejection is maintained for the reason as set forth in this Office action.

Conclusion

21. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thong Q. Nguyen whose telephone number is (571) 272-2316. The examiner can normally be reached on M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Drew A. Dunn can be reached on (571) 272-2312. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Thong Q. Nguyen
Primary Examiner
Art Unit 2872
